

Unit Title: Scientific Method and Lab Safety

Key Concepts: Systems

Related Concepts: Models

Global Context: Scientific and technical Innovation

Statement of Inquiry: Students will use systems, models, and methods to provide a safe class to get quality products and solutions during lab work.

Task: POP! POP! POP!

Task Description: Design a lab with the given materials to prove your understandings of lab safety and scientific method.

Lab Group Member Names & Roles:

~Facilitator: _____ ~Recorder: _____ ~Materials Manager: _____ ~Reporter: _____

Directions: TaDa! Finally, it is time to dive into science labs and experiments! Now is your time to prove to me, you are ready to use your lab safety procedures and scientific method skills. You, and your Labmates' will be designing and conducting your OWN experiment. Make sure to follow lab safety expectations and the scientific method procedures we talked about in class. Use your graphic organizer with notes for help. READY? SET? GO! - show me you are ready for more!

The materials you have to design and complete your lab are as follows:

-1 test tube

-1 test tube holder

-aluminum foil

-vegetable oil

-popcorn seeds

-2 candles (I will light the candle for you, if needed)

-timer

-pipette (dropper)

Criterion B: Inquiring and Designing Grade 8/Year 3

Level	Descriptors	S	T	Indicators
0	The student does not reach a standard described by any of the descriptors below.			The student does not reach a standard described by any of the descriptors below.
1 -2	The student is able to: i. state a problem or question to be tested by a scientific investigation, with limited success ii. state a testable hypothesis iii. state the variables			The student is able to: i. state a problem or question for your Popcorn Lab to be tested by a scientific investigation, with limited success with the given materials ii. state a testable hypothesis iii. state the variables as seen in your procedures and observations
3 -4	The student is able to: i. state a problem or question to be tested by a scientific investigation ii. outline a testable hypothesis using scientific reasoning iii. outline how to manipulate the variables, and state how relevant data will be collected			The student is able to: i. state a problem or question for your Popcorn Lab to be tested by a scientific investigation with the given materials ii. outline a testable hypothesis using scientific reasoning iii. outline how to manipulate the variables, and state how relevant data will be collected as seen in your procedures and observations
5 -6	The student is able to: i. outline a problem or question to be tested by a scientific investigation ii. outline and explain a testable hypothesis using scientific reasoning iii. outline how to manipulate the variables, and outline how sufficient, relevant data will be collected			The student is able to: i. outline a problem or question for your Popcorn Lab to be tested by a scientific investigation with the given materials ii. outline and explain a testable hypothesis using scientific reasoning iii. outline how to manipulate the variables, and outline how sufficient, relevant data will be collected as seen in your procedures and observations
7-8	The student is able to: i. describe a problem or question to be tested by a scientific investigation ii. outline and explain a testable hypothesis using correct scientific reasoning iii. describe how to manipulate the variables, and describe how sufficient, relevant data will be collected			The student is able to: i. describe a problem or question for your Popcorn Lab to be tested by a scientific investigation with the given materials ii. outline and explain a testable hypothesis using correct scientific reasoning iii. describe how to manipulate the variables, and describe how sufficient, relevant data will be collected as seen in your procedures and observations
	Teacher Comment			

Criterion C: Processing and Evaluating Grade 8/Year 3

Level	Descriptors	S	T
0	The student does not reach a standard described by any of the descriptors below.		
1 -2	The student is able to: ii. accurately interpret data iii. state the validity of a hypothesis with limited reference to a scientific investigation v. state limited improvements or extensions to the method.		The student is able to: ii. accurately interpret data to create your conclusion iii. state the validity of a hypothesis with limited reference to a scientific investigation (in your conclusion - was your hypothesis supported?) v. state limited improvements or extensions to your popcorn lab if you were to re-do it
3 -4	The student is able to: ii. accurately interpret data and describe results iii. state the validity of a hypothesis based on the outcome of a scientific investigation v. state improvements or extensions to the method that would benefit the scientific investigation.		The student is able to: ii. accurately interpret data and describe results to create your conclusion iii. state the validity of a hypothesis based on the outcome of a scientific investigation (in your conclusion - was your hypothesis supported?) v. state improvements or extensions to the method that would benefit your popcorn lab if you were to re-do it
5 -6	The student is able to: ii. accurately interpret data and describe results using scientific reasoning iii. outline the validity of a hypothesis based on the outcome of a scientific investigation v. outline improvements or extensions to the method that would benefit the scientific investigation.		The student is able to: ii. accurately interpret data to create your conclusion using scientific reasoning iii. outline the validity of a hypothesis based on the outcome of a scientific investigation (in your conclusion - was your hypothesis supported?) v. outline improvements or extensions to the method that would benefit your popcorn lab if you were to re-do it
7-8	The student is able to: ii. accurately interpret data and describe results using correct scientific reasoning iii. discuss the validity of a hypothesis based on the outcome of a scientific investigation v. describe improvements or extensions to the method that would benefit the scientific investigation.		The student is able to: ii. accurately interpret data to create your conclusion using correct scientific reasoning iii. discuss the validity of a hypothesis based on the outcome of a scientific investigation (in your conclusion - was your hypothesis supported?) v. describe improvements or extensions to the method that would benefit your popcorn lab if you were to re-do it
	Teacher Comment		